



Attorney Docket No. 0756-2424

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: ) Group Art Unit: 2823  
Osamu NAKAMURA et al. ) Examiner: H. Lee  
Serial No. 10/046,893 )  
Filed: January 17, 2002 )  
For: METHOD OF MANUFACTURING )  
SEMICONDUCTOR DEVICE )  
I hereby certify that this correspondence is being  
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P.O. Box 1450, Alexandria, VA 22313-1450, on  
May 5, 2004.

Adel M. Stamer

RESPONSE

Honorable Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The Official Action mailed January 5, 2004, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to April 5, 2004. Accordingly, Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on August 23, 2002 and October 31, 2003.

Claims 1-3, 5-22, 24-39 and 41-58 are pending in the present application, of which claims 1, 18, 35, 55 and 57 are independent. The Applicants note with appreciation the allowance of claims 35-39, 41-51, 54, 57 and 58 and the indication of the allowability of claims 2, 3, 5, 21, 22, 24 and 56 (pages 9-10, Paper No. 123103). For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action continues to reject claims 1, 6-20, 25-34, 52, 53 and 55 under the doctrine of obviousness-type double patenting over the combination of claims 10, 12, 14, 16, 17 and 20 of U.S. Patent No. 6,204,101 to

Yamazaki et al., U.S. Patent No. 6,337,259 to Ueda et al., and U.S. Patent No. 6,077,731 to Yamazaki et al.

As stated in MPEP § 804, under the heading “Obviousness-Type,” in order to form an obviousness-type double patenting rejection, a claim in the present application must define an invention that is merely an obvious variation of an invention claimed in the prior art patent, and the claimed subject matter must not be patentably distinct from the subject matter claimed in a commonly owned patent. Also, the patent principally underlying the double patenting rejection is not considered prior art.

The Official Action continues to assert that Yamazaki '101 discloses selectively adding a rare gas element to the semiconductor film having a crystalline structure to form an impurity region. The Applicants rebutted this assertion in the *Amendment* filed October 22, 2003, specifically arguing that Yamazaki '101 does not disclose adding a rare gas element to the semiconductor film. In the *Response to Arguments*, the Official Action asserts that “although Yamazaki '101 do not literally recite ‘adding a rare gas element to the semiconductor film having a crystalline structure’, Yamazaki '101 in claim 12 do recite ‘heating said crystallized semiconductor film … in an atmosphere comprising of Ar, N<sub>2</sub>, He and Ne’” and that the adding step “is performed by heating the crystallized semiconductor film in the rare gas ambient” (page 11, Paper No. 123103). The Applicants respectfully disagree and traverse these assertions.

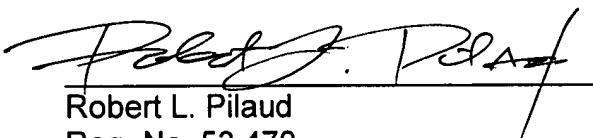
The Applicants respectfully submit that it is obvious that Yamazaki '101 does not intend to add the rare gas into the semiconductor film and that the mere recitation of heating a semiconductor film in an atmosphere comprising a rare gas element is not the same as adding a rare gas element into a semiconductor film. In fact, the rare gas ambient of Yamazaki '101 is described as an “inactive gas” (column 5, lines 45-47). Therefore, the claims of Yamazaki '101 do not teach or suggest selectively adding a rare gas element to the semiconductor film having a crystalline structure to form an impurity region.

Ueda and Yamazaki '731 do not cure the deficiencies in Yamazaki '101. The Official Action relies on Ueda to allegedly teach removing an impurity region (*Id.*), metal elements for crystallization (page 4, *Id.*), and various formation steps (page 7, *Id.*). The Official Action relies on Yamazaki '731 to allegedly teach irradiation with a strong light or laser (page 5, *Id.*), and various formation steps (page 6, *Id.*). Ueda and Yamazaki '731 do not teach or suggest selectively adding a rare gas element to the semiconductor film having a crystalline structure to form an impurity region. Therefore, the claims of Yamazaki '101, either alone or in combination with Ueda and Yamazaki '731, do not teach or suggest all the features of the independent claims of the present invention.

The Applicants respectfully submit that the subject application is patentably distinct from the claims of Yamazaki '101, either alone or in combination with Ueda and Yamazaki '731. Reconsideration of the obviousness-type double patenting rejection is requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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